We claim:

1. A polyalkene amine formulation, comprising at least one polyalkene amine in a solvent, wherein the formulation has at least one of the following low temperature properties:
   a) cloud point less than or equal to -28°C
   b) pour point less than or equal to -27°C; and/or
   c) substantially no crystalline precipitates after storage at a temperature in the range from about -10 to -40°C.

2. The formulation according to claim 1 having a pour point in the range from about -27 to -55°C and/or a cloud point in the range from about -28 to -51°C.

3. The formulation according to either of the preceding claims, wherein the solvent has a density (15°C) in the range from about 650 to 900 kg/m^3 and/or a viscosity (20°C) in the range from about 1.0 to 5.0 mm^2/s.

4. The formulation according to any of the preceding claims, wherein the solvent is selected from linear, branched and cyclic, substantially saturated C_6-C_{20} hydrocarbons and mixtures thereof.

5. The formulation according to claim 2, wherein the solvent is selected from
   S1) at least one n- or iso-C_{10}-C_{14} paraffin,
   S2) at least one C_{10}-C_{14} naphthene,
   or mixtures thereof.

6. The formulation according to any of the preceding claims, wherein S1 and S2 are present in a mixing ratio of from 10:90 to 90:10.

7. The formulation according to any of the preceding claims, wherein the polyalkene moiety of the polyalkene amine is the polymerization product of identical or different, straight-chain or branched C_2-C_6 olefin monomers.

8. The formulation according to claim 7, wherein the polyalkene has a number-average molecular weight Mn of from about 200 to 10 000.

9. The formulation according to claim 8, wherein the polyalkene is derived from isobutene or an isobutenic monomer mixture.

10. The formulation according to claim 9, wherein the polyalkene is a polyisobutene (PIB).

11. The formulation according to any of the preceding claims, wherein the polyalkene amine is a polyisobutene amine (PIBA) which is derived from a polyisobutene having at least one of the following properties:

a) fraction of vinylidene double bonds of at least 70 mol%, based on polyisobutene;
b) polyisobutene polymer structure composed of at least 85% by weight of isobutene units;
c) polydispersity in the range from 1.05 to 7.

12. The formulation according to any of the preceding claims, wherein the polyalkene amine is the reaction product of a polyalkene with an amine of the following general formula I

$$HNR^1R^2 \qquad (I)$$

where
R^1 and R^2 are each independently H, a C_1-C_{18}-alkyl, C_2-C_{18}-alkenyl, C_4-C_{18}-cycloalkyl, C_1-C_{18}-alkylaryl, hydroxy-C_1-C_{18}-alkyl, poly(oxyalkyl), polyalkylene polyamine or a polyalkylene imine radical; or, together with the nitrogen atom to which they are bonded, are a heterocyclic ring.

13. The formulation according to any of the preceding claims, wherein the PIBA used is the reaction product of the hydroformylation and subsequent reductive amination of reactive PIB.

14. The formulation according to any of the preceding claims, wherein the solvent is the process solvent of the hydroformylation and subsequent reductive amination of reactive PIB.

15. A PIBA formulation comprising PIBA in a mixture comprising a solvent as defined in any of claims 2 to 4, wherein PIBA is present in a fraction of at least about 63% by weight, based on the total weight of the mixture.

16. A fuel or lubricant composition comprising, in a majority of a fuel or lubricant, an effective amount of a formulation according to any of the preceding claims.

17. The use of a formulation according to any of claims 1 to 15

    a) as an additive for fuel or lubricant compositions, or
    b) as an additive for printing inks.

18. The use according to claim 17 as an additive for improving the intake system-cleaning action of a gasoline fuel.

19. An additive package comprising a formulation according to any of claims 1 to 15, if appropriate in combination with at least one further coadditive.

20. The use of a solvent S1, S2 or of a mixture of S1 and S2 as defined in any of claims 1 to 8 for improving the low temperature performance of PIBA.

21. A process for preparing a polyalkene amine formulation according to any of claims 1 to 15, wherein

    a) a polyalkene amine as defined in any of claims 7 to 11 is dissolved in a solvent as defined in any of claims 3 to 6;
    b) the solution is hydroformylated in a manner known per se in the presence of CO and H_2; and
    c) the resulting oxo product is aminated under hydrogenating conditions in the presence of an amine of the above formula I.

22. The process according to claim 21, wherein a solution is preferred in stage a) whose solvent fraction is at most 40% by weight based on the total weight of the solution.